Listing of the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-10. (CANCELED)

11. (CURRENTLY AMENDED) An ordered array of immobilized oligonucleotides in the array's x and y coordinates with multiple copies of a sequence of interest extending in the array's z dimension, wherein each copy has an identical generic oligonucleotide that is attached to the array's x and y coordinates and wherein each copy also carries a unique sequence of interest repeated at least two times in the z dimension of the array and wherein between each unique sequence of interest there is at least one region that is complementary to at least a portion of the identical generic oligonucleotide attached to the array's x and y coordinates produced by:

(a) providing: i) a solid support comprising a plurality of positions for oligonucleotides, said positions defined by x and y coordinates; ii) a plurality of identical oligonucleotides, each oligonucleotide comprising a sequence, wherein said oligonucleotide comprises a 5' end which is attached to the solid support and a 3' end ; and iii) a plurality of unique circular DNA templates, each circular DNA template comprising a sequence of interest and a region complementary to at least a portion of said sequence of said oligonucleotide, said sequence of interest being different for each circular DNA template;

(b) immobilizing one oligonucleotide from said plurality of identical oligonucleotides in each of said positions on said solid support to create an ordered array comprising a plurality of identical immobilized oligonucleotides, each of which is described by its position defined by its x and y coordinates;

(c) adding to each immobilized oligonucleotide of said ordered array a circular DNA template from said plurality of said unique circular DNA templates under conditions such that each immobilized oligonucleotide hybridizes to a circular DNA template to create a plurality of circular templates hybridized to immobilized oligonucleotides at positions defined by their x and y coordinates, each circular template comprising a different sequence of interest; and

(d) extending each of said hybridized immobilized oligonucleotides using a polymerase to create an ordered array of extended immobilized oligonucleotides, wherein each extended immobilized oligonucleotide has a position on the array defined by its x and y

coordinates, and is extended in the z dimension, a growing strand, such that each extended immobilized oligonucleotide comprises at least two copies of said sequence of interest extending in the z dimension by a circular DNA template having a unique sequence of interest, wherein said unique sequence of interest has a different sequence corresponding to a unique portion of the target sequence, whereby the end of the sequence extending in the z-dimension of each extended immobilized oligonucleotide corresponds to the unique portion of the target, ~~wherein said extended immobilized oligonucleotide has a unique 3' terminus resulting from the termination of the amplification of the sequence of interest~~.

12-22. (CANCELED)

23. (CURRENTLY AMENDED) An ordered array of immobilized oligonucleotides in the array's x and y coordinates with multiple copies of a sequence of interest extending in the array's z dimension, wherein each copy has a different unique sequence attached to the array's x and y coordinates, each different sequence being complementary to the sequence of interest, wherein at least two copies of the different unique sequence are repeated along the z dimension of the array produced by:

a) providing: i) a solid support comprising a plurality of positions for oligonucleotides, said positions defined by x and y coordinates; and ii) a plurality of pairs of corresponding oligonucleotides and circular DNA templates, wherein each circular DNA template comprises a sequence of interest, and at least two of said sequence of interest are different, and the corresponding oligonucleotide for each circular DNA template comprises a sequence, wherein said oligonucleotide comprises a 5' end which is attached to the solid support and a 3' end, and further wherein said oligonucleotide comprises a sequence complementary to a portion of the sequence of interest on the corresponding circular DNA template;

b) immobilizing one oligonucleotide in each of said positions on said solid support to create an ordered array comprising a plurality of immobilized oligonucleotides, each of which is described by its position defined by its x and y coordinates;

c) adding to each immobilized oligonucleotide of said ordered array a corresponding circular DNA template under conditions such that said immobilized oligonucleotide hybridizes to said corresponding circular DNA template to create a plurality of circular templates each of

which is hybridized to its corresponding immobilized oligonucleotide at a position defined by its x and y coordinates; and

d) extending said hybridized immobilized oligonucleotides using a polymerase to create an ordered array of extended immobilized oligonucleotides, wherein each extended immobilized oligonucleotide has a position on the array defined by its x and y coordinates, and is extended in the z dimension such that each extended immobilized oligonucleotide comprises at least two copies extending at the terminus in the direction of the z dimension, a growing strand, of the sequence of interest contained in said hybridized circular template by a circular DNA template having a unique sequence of interest, wherein said unique sequence of interest has a different sequence corresponding to a unique portion of a target sequence, whereby the 3' terminus extending in the direction of the z-dimension of each extended immobilized oligonucleotide corresponds to the unique portion of the target, ~~wherein said extended immobilized oligonucleotide has a unique 3' terminus resulting from the termination of the amplification of the sequence of interest~~.

24. (CURRENTLY AMENDED) The ordered array of claim 11, wherein said ordered array has at least three copies of the sequence of interest extending in the Z dimension separated by a same generic nucleic acid sequence.

25. (CURRENTLY AMENDED) The ordered array of claim 11, wherein said ordered array has at least 10 copies of the sequence of interest extending in the Z dimension separated by a same generic nucleic acid sequence.

26. (CURRENTLY AMENDED) The ordered array of claim 11, wherein said ordered array has at least 50 copies of the sequence of interest extending in the Z dimension separated by a same generic nucleic acid sequence.

27. (CURRENTLY AMENDED) The ordered array of claim 23, wherein said ordered array has at least three copies of the sequence of interest extending in the Z dimension separated by a second, identical nucleic acid sequence.

28. (CURRENTLY AMENDED) The ordered array of claim 23, wherein said ordered array has at least 10 copies of the sequence of interest extending in the Z dimension separated by a second, identical nucleic acid sequence.

29. (CURRENTLY AMENDED) The ordered array of claim 23, wherein said ordered array has at least 50 copies of the sequence of interest extending in the Z dimension separated by a second, identical nucleic acid sequence.

30. (CURRENTLY AMENDED) An ordered array of immobilized oligonucleotides in the array's x and y coordinates with multiple copies of a sequence of interest extending in the array's z dimension comprising:

a solid support comprising a substrate, wherein said substrate contains i) a plurality of positions for oligonucleotides, said positions defined by x and y coordinates; and ii) a plurality of extended oligonucleotides immobilized on the substrate which extend into the z coordinate, wherein each extended immobilized oligonucleotide comprises a sequence of interest, wherein each sequence of interest is different for each extended immobilized oligonucleotide and corresponds to a portion of a target, and wherein each extended immobilized oligonucleotide comprises at least two copies of said sequence of interest separated by at least one generic nucleic acid sequence such that the array has redundancy of at least two copies of each sequence of interest separated by a generic nucleic acid sequence in the terminus extending to the direction of the z-dimension~~, wherein said extended immobilized oligonucleotide has a unique 3' terminus resulting from the termination of the amplification of the sequence of interest~~

31. (CURRENTLY AMENDED) The ordered-array of claim 30, wherein each extended immobilized oligonucleotide comprises at least three copies of said sequence of interest separated by at least two copies of a generic nucleic acid sequence.

32. (CURRENTLY AMENDED) The ordered array of claim 30, wherein each extended immobilized oligonucleotide comprises at least 10 copies of said sequence of interest separated by a same generic nucleic acid sequence.

33. (CURRENTLY AMENDED) The ordered array of claim 30, wherein each extended immobilized oligonucleotide comprises at least 50 copies of said sequence of interest separated by a same generic nucleic acid sequence.

34. (CURRENTLY AMENDED) The ordered array of claims 11 and 23, wherein at least two copies of a template nucleic acid or a fragment thereof corresponding to the sequence of interest are hybridized to at least one of the extended immobilized oligonucleotides comprising at least

two copies of the sequence of interest along the z coordinate separated by a same generic nucleic acid sequence.

35. (PREVIOUSLY PRESENTED) The ordered array of claims 25, 26, 27, 28, and 29, wherein at least two copies of a template nucleic acid or a fragment thereof corresponding to the sequence of interest are hybridized to at least one of the extended immobilized oligonucleotides comprising the sequence of interest along the z coordinate.

36. (PREVIOUSLY PRESENTED) The ordered array of claims 30, 31, 32, and 33, wherein at least two copies of a template nucleic acid or a fragment thereof corresponding to the sequence of interest are hybridized to at least one of the extended immobilized oligonucleotides comprising the sequence of interest along the z coordinate.

37. (PREVIOUSLY PRESENTED) The ordered array of claim 32, wherein at least ten copies of a template nucleic acid or a fragment thereof are hybridized to said corresponding sequence of interest of at least one of the extended immobilized oligonucleotides comprising the sequence of interest along the z coordinate.

38. (PREVIOUSLY PRESENTED) The ordered array of claim 33, wherein at least fifty copies of a template nucleic acid or a fragment thereof are hybridized to said corresponding sequence of interest of at least one of the extended immobilized oligonucleotides comprising the sequence of interest along the z coordinate.